

ABSTRACT

The present invention has been made in order to manufacture a silicon semiconductor substrate used for a semiconductor integrated circuit device, higher in carrier mobility, especially in electron mobility, which is a carrier of an n-type FET, on a {100} plane as a main surface, and provides a silicon semiconductor substrate and a method for manufacturing the same, wherein the conventional RCA cleaning is employed without the use of special cleaning and the surface of the substrate is planarized at an atomic level to thereby decrease the surface roughness thereof without the use of the radical oxidation. The present invention provides a silicon semiconductor substrate comprising: a {110} plane or a plane inclined from a {110} plane as a main surface of the substrate; and steps arranged at an atomic level along a $\langle 110 \rangle$ orientation on the main surface.